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NOTICE OF ALLOWANCE AND FEE(S) DUE

72875 7590 07/07/2008

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

EXAMINER

KASRAIAN, ALLAHYAR

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 07/07/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/614,803

07/09/2003

Italo Busi

Q76443

8051

TITLE OF INVENTION: METHOD AND APPARATUS FOR END-TO-END CONNECTION BETWEEN AN RPR AND AN MPLS NETWORK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	10/07/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

72875 7590 07/07/2008

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/614,803 07/09/2003 Italo Busi Q76443 8051

TITLE OF INVENTION: METHOD AND APPARATUS FOR END-TO-END CONNECTION BETWEEN AN RPR AND AN MPLS NETWORK

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1440 \$300 \$0 \$1740 10/07/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
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KASRAIAN, ALLAHYAR 2617 370-395500

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,803	07/09/2003	Italo Busi	Q76443	8051
72875	7590	07/07/2008	EXAMINER	
SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037			KASRAIAN, ALLAHYAR	
			ART UNIT	PAPER NUMBER
			2617	
DATE MAILED: 07/07/2008				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 909 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 909 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/614,803

Applicant(s)

BUSI ET AL.

Examiner

Art Unit

ALLAHYAR KASRAIAN

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/30/2008.
2. ☒ The allowed claim(s) is/are 5,6,10 and 11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Remarks

1. The present Office Action is based upon the Applicant's after final response on 05/30/2008.

Allowable Subject Matter

2. **Claims 5, 6, 10 and 11** are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding **claim 5**, the best prior art found during the examination of the present application was **Bannai et al. (U.S. Pub. # 2003/0208525 A1)** (hereinafter Bannai).

Bannai discloses a method for realizing an end-to-end connection between a client layer connected to a RPR (Resilient Packet Ring) (FIG. 1, Domains A on Resilient Packet Ring 102) and a client layer connected to Multi Protocol Label Switching (MPLS) network (see FIG. 1 domains A in locations 124, and 126; in addition lines 4-6 of paragraph 0030), the method comprising:

interconnecting the PRP network and MPLS network through a Transparent LAN Service (TLS) layer (lines 1-5 of paragraph 0026);

in direction from RPR to MPLS (FIG. 5 and FIG. 7B, lines 7-10 of paragraph 0046):

encapsulating received client frames in TLS packets, indicating the final destination (FIG. 5, lines 7-13 of paragraph 0046);

encapsulating received client frames in MPLS packets, indicating a Label

Switched Path (LSP) that has to be followed up to the final destination (FIG. 5, lines 7-13 of paragraph 0046);

wherein the TLS packets become MPLS packets and travel in the MPLS network until the final destination (paragraph 0046); and

in the direction from MPLS to RPR (FIG. 5, lines 7-13 of paragraph 0046):

encapsulating received client frames in MPLS packets, indicating a Label Switched Path (LSP) that has to be followed up to the final destination (FIG. 5, lines 7-13 of paragraph 0046);

switching the MPLS packets inside the MPLS network and then passing the switched MPLS packets to the TLS network, becoming TLS packets (FIG. 5, lines 7-13 of paragraph 0046);

encapsulating the TLS packets in RPR packets and wherein the encapsulated PLS packets travel in the RPR network, until the final destination(paragraph 0046),

wherein an auxiliary TLS Header is added to said received client frames, obtaining said TLS packets; then an RPR Header is added to said TLS packets, obtaining said RPR packets, and in that said TLS Header contains a channel identifier field, identifying the connection between the client layer connected to the RPR network and the client layer connected to the MPLS network, said TLS Header further containing Reserved bits and Error correction bits (see FIG. 5, 6, 7A-C, Service Header 506, and lines 1-4; TTL field 616, and lines 5-7 of paragraph 0055; unicast label filed 608, and lines 1-2; Unused filed 606; FIG. 7A, and lines 7-8);

However, Bannai fails to specifically disclose the TLS header converted in a

MPLS header by the following steps: the TLS channel identifier field is left unchanged and becomes the MPLS Label in the MPLS header; and the TLS Error correction bits are removed and a predefined MPLS Time-to-live value is inserted in the MPLS header.

Regarding **claim 10**, the best prior art found during the examination of the present application was **Bannai et al. (U.S. Pub. # 2003/0208525 A1)** (hereinafter Bannai).

Bannai discloses an RPR node suitable to implement a method for realizing an end-to-end connection between a client layer connected to a RPR (Resilient Packet Ring) (FIG. 1, Domains A on Resilient Packet Ring 102) and a client layer connected to Multi Protocol Label Switching (MPLS) network (see FIG. 1 domains A in locations 124, and 126; in addition lines 4-6 of paragraph 0030), the method comprising:

interconnecting the RPR network and MPLS network through a Transparent LAN Service (TLS) layer (lines 1-5 of paragraph 0026);

in direction from RPR to MPLS (FIG. 5 and FIG. 7B, lines 7-10 of paragraph 0046):

encapsulating received client frames in TLS packets, indicating the final destination (FIG. 5, lines 7-13 of paragraph 0046);

encapsulating received client frames in MPLS packets, indicating a Label Switched Path (LSP) that has to be followed up to the final destination (FIG. 5, lines 7-13 of paragraph 0046);

wherein the TLS packets become MPLS packets and travel in the MPLS network

until the final destination (paragraph 0046); and

in the direction from MPLS to RPR (FIG. 5, lines 7-13 of paragraph 0046):

encapsulating received client frames in MPLS packets, indicating a Label Switched Path (LSP) that has to be followed up to the final destination (FIG. 5, lines 7-13 of paragraph 0046);

switching the MPLS packets inside the MPLS network and then passing the switched MPLS packets to the TLS network, becoming TLS packets (FIG. 5, lines 7-13 of paragraph 0046);

encapsulating the TLS packets in RPR packets and wherein the encapsulated PLS packets travel in the RPR network, until the final destination(paragraph 0046),

wherein an auxiliary TLS Header is added to said received client frames, obtaining said TLS packets; then an RPR Header is added to said TLS packets, obtaining said RPR packets, and in that said TLS Header contains a channel identifier field, identifying the connection between the client layer connected to the RPR network and the client layer connected to the MPLS network, said TLS Header further containing Reserved bits and Error correction bits (see FIG. 5, 6, 7A-C, Service Header 506, and lines 1-4; TTL field 616, and lines 5-7 of paragraph 0055; unicast label filed, and lines 1-2; Unused filed 606; FIG. 7A, and lines 7-8);

wherein the PRP node comprises: means for adding the TLS Header to the RPR header (FIG. 5, paragraph 0046);

However, Bannai fails to specifically disclose, teach or suggest that the RPR node comprises means for selecting a port connected to a corresponding port of a node

of the MPLS network, on the basis of the channel identifier field value.

Therefore, **claims 5, 6, 10 and 11** are considered novel and non-obvious, and hence, allowable.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

- a. Sharma et al. (U.S. Patent # 6862288 B2) disclose Circuit reestablishment and tear down in a highly available communications system.
- b. Jha (U.S. Patent # 6847644 B1) discloses Hybrid data transport scheme over optical networks.
- c. Jha (U.S. Patent # 7006525 B1) discloses Hybrid data transport scheme over optical networks.
- d. Katz (U.S. Patent # 7145878 B2) discloses Avoiding overlapping segments in transparent LAN services on ring-based networks
- e. Hurren et al. (U.S. Patent # 6788681 B1) disclose Virtual private networks

and methods for their operation.

5. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

6. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Allahyar Kasraian whose telephone number is (571) 270-1772. The Examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 5:00 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Pérez-Gutiérrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

Art Unit: 2617

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

*/Allahyar Kasraian/
Examiner, Art Unit 2617*

A.K./ak

June 23, 2008

*/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617*